



# Pennsylvania Flood Safety Awareness Week March 6-10th, 2015

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**Weather-Ready Nation**

National Oceanic and Atmospheric Administration



Rescuers search for people stranded by flooding in downtown Kingfisher, Oklahoma. (photo credit: FEMA)

- Flooding is a coast to coast threat to the United States and its territories nearly every day of the year.
- This presentation is designed to teach you how to stay safe in a flood event.
- If you know what to do before, during, and after a flood you can increase your chances of survival.



- What Is Turn Around Don't Drown® (TADD)?
  - TADD is a NOAA National Weather Service campaign to warn people of the hazards of walking or driving a vehicle through flood waters.
- Each year, more deaths occur due to flooding than from any other severe weather related hazard. The Centers for Disease Control report that over half of all flood-related drownings occur when a vehicle is driven into hazardous flood water.
- Most flood-related deaths and injuries could be avoided if people who come upon areas covered with water followed this simple advice: Turn Around Don't Drown®.



# Pennsylvania has a Long History of Floods

- August 1955: Connie and Diane
- June 1972: Agnes
- January 1996: Snowmelt
- Hurricane Ivan: 2004
- June 2006: Heavy tropical rains.
- August and September 2011: Irene and Lee

<http://www.floodsafety.noaa.gov/states/ny-flood.shtml>





# Flash Flooding



- Flash floods are exactly what the name suggests: floods that happen in a flash!
- Flash floods generally develop within 6 hours of the immediate cause.
- Causes of flash flooding include heavy rain, ice or debris jams, and levee or dam failure.

# River Flooding

- River flooding occurs when river levels rise and overflow their banks and inundate areas that are normally dry.
  - River flooding can be caused by heavy rainfall, dam failures, rapid snowmelt and ice jams.
- **Minor river flooding** means that low-lying areas adjacent to the stream or river, mainly rural areas and farmland and secondary roadways near the river flood.
- **Moderate flooding** means water levels rise high enough to impact homes and businesses near the river and some evacuations may be needed. Larger roads and highways may also be impacted.
- **Major flooding** means that extensive rural and/or urban flooding is expected. Towns may become isolated and major traffic routes may be flooded. Evacuation of numerous homes and business may be required.

Wilkes Barre Right After Agnes June 1972



# Ice Jam Floods

- Ice jams are common during the winter and spring along rivers, streams and creeks in the higher latitudes of the continental U.S. which includes PA!!







# NWS Flood Products

- **Flash Flood Warning:** Take Action! A Flash Flood Warning is issued when a flash flood is imminent or occurring. If you are in a flood prone area move immediately to high ground. A flash flood is a sudden violent flood that can take from minutes to hours to develop. It is even possible to experience a flash flood in areas not immediately receiving rain.
- **Flood Warning:** Take Action! A Flood Warning is issued when the hazardous weather event is imminent or already happening. A Flood Warning is issued when flooding is imminent or occurring.
- **Flood Watch:** Be Prepared: A Flood Watch is issued when conditions are favorable for a specific hazardous weather event to occur. A Flood Watch is issued when conditions are favorable for flooding. It does not mean flooding will occur, but it is possible.
- **Flood Advisory:** Be Aware: A Flood Advisory is issued when a specific weather event that is forecast to occur may become a nuisance. A Flood Advisory is issued when flooding is not expected to be bad enough to issue a warning.



The forecast operations floor at the NWS Middle Atlantic River Forecast Center (RFC).





# Before a Flood

- **Communications Plan:** It is important to be able to communicate with your family and friends in the event of a disaster. Whether it is having a specific person identified to contact for status updates or a safe location to meet up with family members, having a plan in place will give you peace of mind if disaster does strike.
- **Emergency Kit:** It is good practice to have enough food, water and medicine on hand at all times to last you at least 3 days in the case of an emergency. Water service may be interrupted or unsafe to drink and food requiring little cooking and no refrigeration may be needed if electric power is interrupted. You should also have batteries, blankets, flashlights, first aid kit, rubber boots, rubber gloves, and a NOAA Weather Radio or other battery operated radio easily available.
- **Know your Risk:** Is your home, business or school in a floodplain? Where is water likely to collect on the roadways you most often travel? What is the fastest way to get to higher ground? Knowing the answers to these questions ahead of time can save your life.



# Before a Flood (continued)



- **Stay Informed:** The National Weather Service's Advanced Hydrologic Prediction Service provides RSS feeds for observed forecast and alert river conditions to help keep the public informed about local water conditions.
- **Prepare Your Home:**
  - If you have access to sandbags or other materials, use them to protect your home from flood waters if you have sufficient time to do so. Filling sandbags can take more time than you may think.
  - Have a professional install check-valves in plumbing to prevent flood waters from backing up into the drains of your home. Make sure your sump pump is working and consider having a backup. Make sure your electric circuit breakers, or fuses, are clearly marked for each area of your home.
  - Since standard homeowners insurance doesn't cover flooding, ensure coverage by contacting your insurance company or agent to purchase flood insurance. This must be done before there is even a threat of flooding as insurance companies stop issuing policies if there is a threat of flooding. (i.e. an approaching hurricane). Many flood insurance policies take at least 30 days to go into effect so even if you can buy it as a storm is approaching, it may not protect your investment.
- **Prepare your Family/Pets:** You may be evacuated, so pack in advance. Don't wait until the last moment to gather the essentials for yourself, your family and/or your pets.
- **Leave** if it is likely your home will flood, don't wait to be ordered to leave; evacuate yourself! Make alternative plans for a place to stay. If you have pets, take them with you or make arrangements to board them at a facility well away from the flooding danger.
- **Charge your Essential Electronics:** Make sure your cell phone and portable radios are all charged in case you lose power or need to evacuate. Also make sure you have back-up batteries on hand.



# During a Flood

- **Stay Informed:** Monitor local radio and television (including NOAA Weather Radio), internet and social media for information and updates.
- **Get to Higher Ground:** Get out of areas subject to flooding and get to higher ground immediately.
- **Obey Evacuation Orders:** If told to evacuate, do so immediately. Be sure to lock your home as you leave. If you have time, disconnect utilities and appliances.
- **Electric Safety:** Don't go into a basement, or any room, if water covers the electrical outlets or if cords are submerged. If you see sparks or hear buzzing, crackling, snapping or popping noises --get out! Stay out of water that may have electricity in it!
- **Avoid Flood Waters:** Do not walk through flood waters. It only takes six inches of moving water to knock you off your feet. If you are trapped by moving water, move to the highest possible point and call 911 for help.
- **Do not drive into flooded roadways or around a barricade; Turn Around, Don't Drown!** Water may be deeper than it appears and can hide many hazards (i.e. sharp objects, washed out road surfaces, electrical wires, chemicals, etc). A vehicle caught in swiftly moving water can be swept away in a matter of seconds. Twelve inches of water can float a car or small SUV and 18 inches of water can carry away large vehicles.



Flood waters rush around a house in Long Island, New York. (photo credit: USGS).





# After a Flood

**Wait for the “All Clear”:** Do not enter a flood damaged home or building until you're given the all clear by authorities. If you choose to enter a flood damaged building, be extremely careful. Water can compromise the structural integrity and its foundation. Make sure the electrical system has been turned off, otherwise contact the power company or a qualified electrician. Contact your insurance agent as soon as possible to discuss the damage done to your property. If you have a home generator, be sure to follow proper safety procedures for use. You can find generator safety information at:

<http://www.usfa.fema.gov/citizens/co/generator.shtm>

**Heed Road Closed and Cautionary Signs:** Road closure and other cautionary signs are put in place for your safety. Pay attention to them!



Downtown Franklin, VA inundated by flood waters. (photo credit: FEMA)



## Weather-Ready Nation

National Oceanic and Atmospheric Administration



# For more information

- <http://www.floodsafety.noaa.gov/>
- <http://www.ready.gov/floods>
- <http://www.redcross.org/prepare/disaster/flood>



# Local NWS Binghamton Information

- <http://weather.gov/bgm>
- <https://www.facebook.com/NWSBinghamton>
- Follow us on Twitter @NWSBinghamton